Response
3-20-97 TB-2697

Patent and Trademark Office
Commissioner of Patents and Trademarks
Washington, DC 20231

Re:
William H. Swain, inventor
Error Correction by Selective Modulation
SN 08/579,395; Filed 12/27/95; Art 2213
Patent Examiner: Mr. Russell M. Kobert
Group 2200
703-308-5222 305-4900
Primary Examiner: Mr. Vinh P. Nguyen

Subject:
Response to the Action of 2/21/97

Introduction:

Applicant does not agree with the examiner's requirement to restrict. Traverse follows.

My traverse relies on the fact that the basic concept (Claim IN) is in every claim, so no claim would be patentable over another because it would lack novelty outside of this specification.

While one or more claims may eventually be judged generic to a degree, applicant did not realize the importance of at least one really generic claim. New claim IN presented herewith is a Sensor (Exhibit I) generic claim of the basic concept illustrated in the Discovery and Essential Characteristic, and many other places.

Each of new claims IIN and IIIN are respectively generic to a simpler and better machine (MER)(Exhibit II), and a still better Machine (MEC)(Exhibit III) by virtue of combining. New Claim IVN is a Process generic claim for a still better Machine.

This response also presents other new claims which are a more basic and/or precise form of the originals in the application filed 12-27-95.

This traverse of the examiner's requirement to restrict relies on the fact that the invention is one. All claims; original and new; process and apparatus; are limited by the basic concept of a Sensor (Exhibit I) which is stated in claim IN, and illustrated various ways; notably in the "Discovery" shown on page 11 of the Application. This reads:

DISCOVERY

The inventor discovered that the output V of many Swain Meter clamps was a lot less sensitive (1/2 to 1/3 in some sensors) to a change in the intensity of a non-uniform magnetic field H_n when the magnitude of an operating parameter I_{sm} was doubled or tripled. And the sensitivity (gain) to a change in signal input current I stayed constant to within a few percent.

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The basic concept is also illustrated by

the ESSENTIAL CHARACTERISTIC which is also on p. 11, and additionally

by Figs. 4, 5, and 8 on p. 57, 58, and 61 of the specification.

Fig. 5 is also shown herein.

The basic concept for a Sensor is presented in generic new claim IN. Briefly, the Signal to Noise ratio (SNR) of a Sensor is modulated by an Operating Parameter Q, and this more useful Sensor is used on it's own, or it is used in a machine to make it better.

To save time and simplify this response, Applicant presents Exhibit I which is a photo of a standard DC Amp Clip, with the 1 ½" Clip around a cable carrying a direct current which is a physical quantity I. This is a Machine and/or Sensor which senses the current I and has two outputs: the liquid crystal diode meter reading; and also the panel "OUTPUT" which is a voltage across the two terminals which is proportional to the input I.

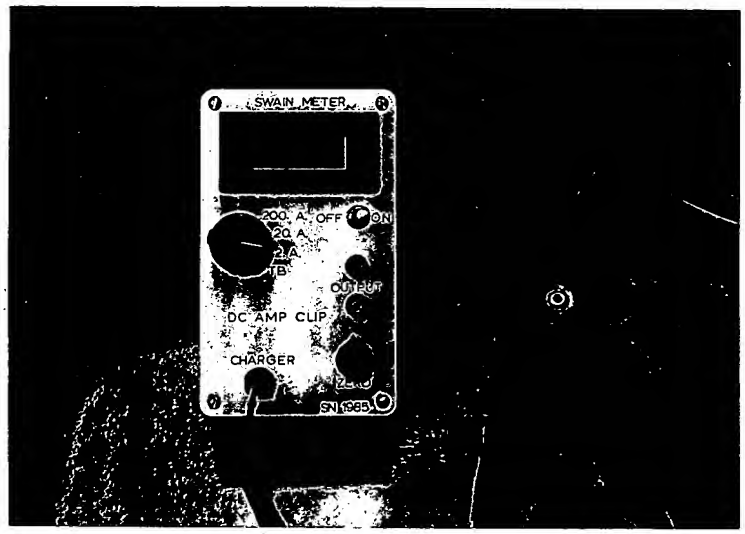

Exhibit I. A DC Amp Clip is one type of Swain Meter. SN 1985 is a standard type Sensor with a 1 ½" diameter Clip used to measure 20 mA to 200 A with 1 mA resolution of the 2 A range.

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Exhibit II pictures and describes the MER meter which is a relatively simple improvement of a standard DC Amp Clip such as shown in Exhibit I. It has wide application.

EXHIBIT II

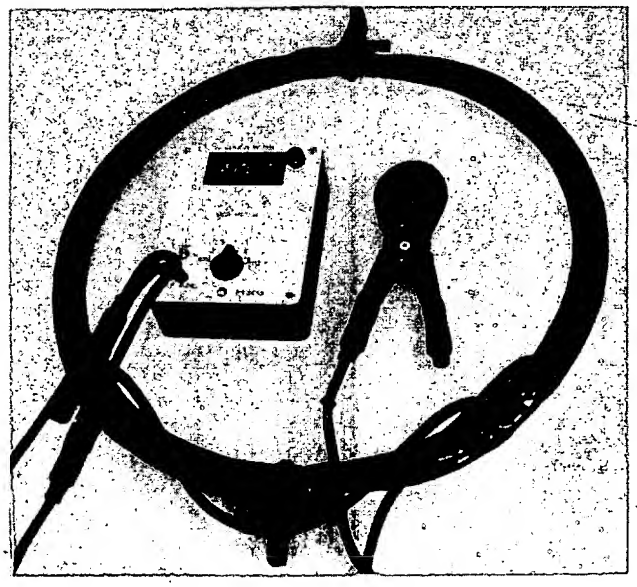
MER Meter™

MER Meters are faster and simpler to use when measuring direct current on steel pipe, near rebar, or a battery cable on a vehicle.

SWAIN METER®, type MER is a 2% clamp-on DC ammeter for measuring on-line current and direction of flow during normal operation.

Accuracy is better when measuring a small current because zero offset error due to local magnets is reduced in a new construction. Generally, the short two step Floating Zero procedure suffices.

Underwater current may be measured. Anode current on offshore platforms, or even current flowing in the sea may be measured because the sensors work in salt water when waterproof connectors are provided.



™MER Meter is a mark of the William H. Swain Co.
® Swain Meter is a registered trademark of the William H. Swain Co.

Features:
Measures direct current without interrupting the circuit.

Magnetic Error Reduction (MER) type DC Amp clips are generally more accurate for measuring direct current with a non-contact sensor. They are especially constructed (patent pending) to substantially reduce zero offset error due to non-uniform magnetic fields common on steel pipe, near rebar, or near the battery in cars and trucks. The benefit is usually two or three to one over comparable standard Swain Meters.

Typical accuracy is ± 2% reading, ± 3 digits, ± H_e[1]. User friendly 3 ½ digit LCD meter with polarity & ½" high numerals.

Protected from 300 A overload.

AC input current is rejected to less than 5 ma change with 10 A input.

Portable, with auto off, or full on for recorder, 50 hr. typ. battery life, and TB range to check power.

Certain models include:
¾" Clips to 60" dia. Clamps, which work in a desert, or 500 ft. under water with optional waterproof connectors & extensions.

1 ma. resolution; 3 Ranges to 200 amp. full scale.

Portable, with internal alkaline or optional external battery operation.

Recorder connector with ± 2 V full scale output.

[1] H_e is zero offset sensitivity of the sensor to the earth's magnetic field. It is specified in the Folder and Price list. The earth field is uniform unless steel is nearby and distorts it so that it acts like a nearby magnet.

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Exhibit III pictures and describes the MEC Meter which a still greater improvement over the standard DC Amp Clip shown in Exhibit I, but it's utility is more limited. For example, it will be good on an automobile production line, but may not be valued as a general purpose tool.

EXHIBIT III

MEC Meter™

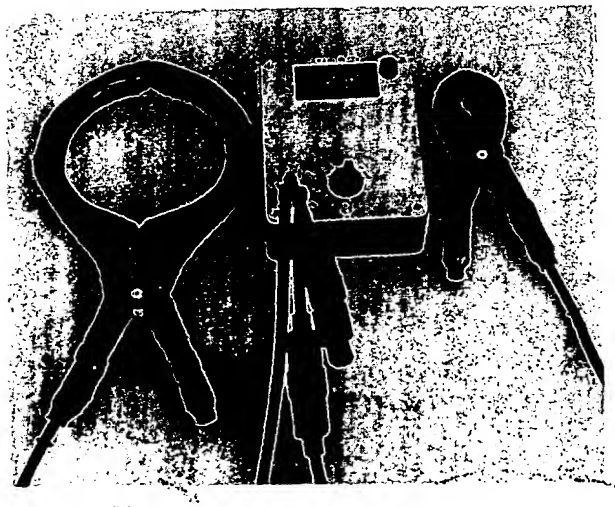
MEC Meters are much faster and simpler to use when measuring direct current in select applications.

SWAIN METER®, type MEC is a 3% clamp-on DC ammeter for measuring on-line current and direction of flow during normal operation.

Accuracy is much better when measuring a small current because zero offset error due to local magnets is corrected in a new construction. (Patent pending).

Small current flowing in vehicle battery cable or offshore platform sub-sea anode supports can be measured more accurately, generally with only one clip-on.

Anode current on offshore platforms at 500 ft. depth may be measured because the sensors work in salt water when waterproof connectors are provided.



™ MEC Meter is a mark of the William H. Swain Co.

® Swain Meter is a Registered Trademark of the William H. Swain Co.

Features:
Measures direct current without interrupting the circuit.

The new Magnetic Error Correction (MEC) type DC Amp Clips are more accurate. They are adjusted to largely cancel the zero offset error due to nearby magnets in specific applications where a large number of small direct current readings on a group of similar conductors are needed in a short time.

The benefit is between three & thirty to one over comparable standard Swain Meters.®

Typical accuracy is ± 3% of reading; ± 4 digits; ± 2 H_e[1] of sensor.

User friendly 3 ½ digit LCD meter with polarity & ½" high numerals.

Protected from 300 A overload.

AC input current is rejected to less than 10 ma change with 1 A input.

Portable, with auto off, or full on for recorder, 50 hr. typ. battery life, and TB range to check power and (-) icon.

Certain models include:
¾" to 5" Clips, plus certain larger dia. clamps.

1 ma. resolution; 3 Ranges to 200 amp. full scale.

Portable, with internal alkaline cells, and optional external battery operation.

Recorder jack with ± 2 V full scale output.

[1] H_e is zero offset sensitivity of the sensor to the earth's magnetic field. It is about double the value specified in the Folder and price list. The earth field is uniform unless steel is nearby and distorts it so that it acts like a nearby magnet.

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New claim IIN is a generic claim of the MER type DC Amp Clip having SNR improved by 2 or 3 to one over standard DC Amp Clips. It includes the limitation of generic Sensor claim IN.

New claim IIIN is a generic claim for the MEC type DC Amp Clip, wherein a combiner about cancels the interfering noise N. It also includes the limitation of Sensor claim IN.

My traverse relies on the fact that the basic concept (Claim IN) is in every claim, so no claim would be patentable over another because it would lack novelty outside of this specification.

A relatively simple implementation (genus) of the basic concept is shown in exhibit II*, and described in new claim IIN. We have sold some MER Meters, and they work better than the Standard DC Amp Clip** when it comes to accuracy near a magnet. The MER Clip and Indicator are constructed so that the SNR is improved by a factor of 2 or 3, as stated in the boxed sector in exhibit II.

The MEC Meter shown in exhibit III* is still more accurate near a magnet as stated in the boxed sector. The Clip** and Indicator are constructed so that the zero offset error due to a nearby magnet can be largely eliminated (canceled) by subtracting (combining) the result of two states of the Operating Parameter Q, which is now I_{sm} in a MEC meter.

Historically I first "invented" i.e., made the DISCOVERY (Application page 11). This led to the basic concept, which is stated in general form in new claim IN. At root; a Sensor has a Signal to Noise Ratio SNR which is substantially changed by changing (modulating) an Operating Parameter Q; and the Sensor is used to better measure or control, on it's own or as part of a Machine.

Error due to zero offset caused by a nearby magnet had long been a problem. The DISCOVERY was applied in various ways to improve the standard DC Amp Clip. It seemed that the best solution would be the MEC approach, i.e., to null (cancel) it out using a combiner. The result is generalized in new claim IIIN, and shown in Exhibit III.

* Exhibit II and III were first prepared and shown to others after filing the application on 12-27-95.

** Clip is a generic term. The sensor in the application is shown as a clip or clamp.

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The MEC was more complicated to build and more limited on application, so I looked for a simpler and more widely applicable cure for error due to zero offset caused by a nearby magnet. The result is the MER. Error is reduced by a factor of 2 or 3 because SNR is made better when the Clip is suitably constructed and Operating Parameter Q (here I_{sm}) is doubled. This is shown in Fig. 5 below, which is copied from the Specification Fig. 5, page 58.

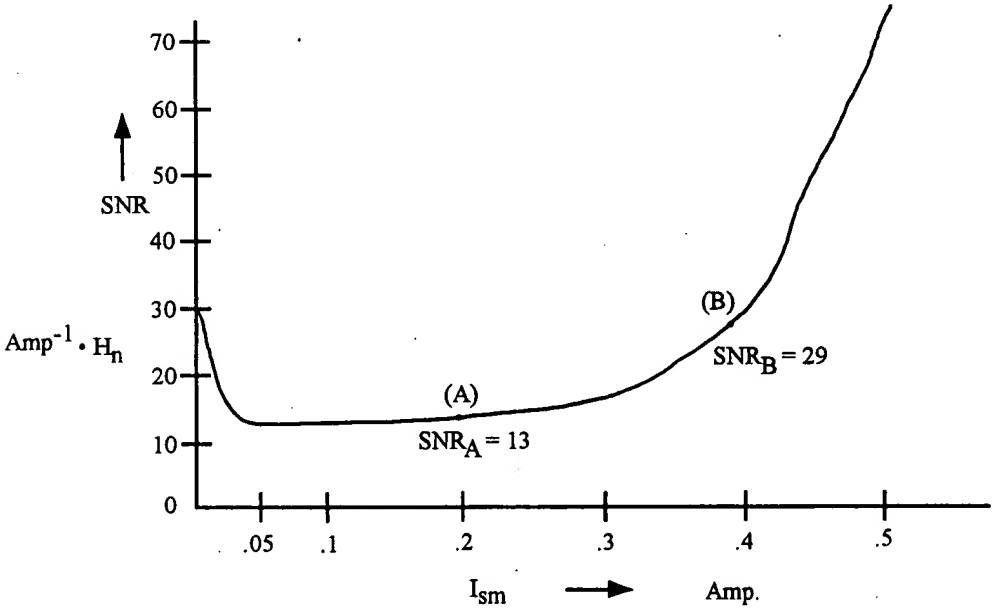

Figure 5
Signal to Noise Ratio (SNR) for Non-Uniform Field H_n
vs.
Operating Parameter I_{sm}
for
5" dia. aperture clip #88 in SN 2336

I appreciate the examiner's note (p. 4 of the Action) about rejection. I say the invention is one, but herewith are disclaimers of sorts.

I "invented" - made the DISCOVERY (claim IN) first. Then I invented the MEC (combiner) (claim IIIN). Later, I realized that the simpler MER (claim IIN) would be a useful improvement over our standard DC Amp Clip. So it appears that given the basic concept (claim IN) together with the MEC (combiner), the MER is anticipated, i.e., the MER is not novel over the MEC.

However, the reverse is not true. Given the basic concept (claim IN) together with the MER (better SNR) (claim IIN) one normally skilled in the art does not have the MEC. The MEC is novel over the MER, and also over the basic concept.

Likewise, given the basic concept (claim IN), the application to a DC Amp Clip, or Swain Meter, or a Hall device is not obvious.

In contrast, a method including the basic concept is not patentable over a machine having the basic concept, because the machine would anticipate the method, i.e., the method would lack novelty once a machine is patented.

And the reverse is also true. A machine including the basic concept is not patentable over a method because the machine would lack novelty.

Moreover, a method for making the MER is not patentable over a MER Machine because the claims for one would read on the other. And also, because the specification teaching the method and embodiment and best practice would read on the specification and description of a MER Machine.

And the same is true for MEC Method and MEC Machine.

This basic concept (claim IN) is also included in all Method or Process, and all apparatus, implement, or machine claims. I highlight the sectors of the specification where this is clearly stated. Thus any claim for either Method or Machine separate from this application would not be allowed because it would be anticipated by this application. Claims of Process or Machine would not be patentable distinct form this application if they were divided to another "invention".

Election

Since election is required even though applicant vigorously contests the examiner's restriction requirement, I elect:

First: Any new claim enclosed herewith over a similar original claim;

Second: Any Machine, Implement or apparatus claim over a similar method or process claim.

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Third: Examiner's "invention" 11 (original claims 8, 9, & 13) is elected over "invention" 1 (claim 1-7, 10-12), despite the fact that claim 1 is generic to the MEC (combined) form of this invention, as will be shown in the detail which follows.

Fourth: Examiner's "species" (1) (original claims 8 & 9), is elected over "species" original claim 13, under protest, with traverse. Claims 8 & 9 are for the MEC (combined) form of this invention which includes the basic concept - as is also true of claim 13 which is for the MER (better SNR) form. A divisional application for the MER (original claim 13) form would be found unpatentable because it lacked novelty over claims 8 & 9, which also rely on the basic concept.

Detailed Response

The detailed response which follows uses the numbering and ordering put forth by the Examiner in his action of 2/21/97. Much of Applicant's traverse is outlined in the preceding Introduction.

1. Applicant elects "invention" 11 (claims 8, 9, &13), under protest, and with traverse.

2. Examiner's reason "... as evidenced by the plurality of Methods Claimed." is unconvincing and inadequate and erroneous as is here shown using "...the evidence now of record..." in the Patent Application of 12/27/95, together with the cited references; including:

Provisional Application, #60/006, 232 of 4 Dec. 95

Disclosure Document #384223 of 23 Oct. 95, and

U.S. Patent 3,768,011.

2.1 Restriction is not proper if the divided claims are not patentably distinct - one from another. The examiner's inventions 1 and 11 are indeed related: they both include the basic concept severally put forth:

2.1.1 in the Discovery on Application page 11 and copied below:

"DISCOVERY

The inventor discovered that the output V of many Swain Meter clamps was a lot less sensitive (1/2 to 1/3 in some sensors) to a change in the intensity of a non-uniform magnetic field H_n when the magnitude of an operating parameter I_{sm} was doubled or tripled. And the sensitivity (gain) to a change in signal input current I stayed constant to within a few percent."

The Discovery puts forth:

a Sensor with output V,

(Exhibit I is a photo of one of many types of Swain Meter for measuring current),

An Operating Parameter I_{sm},

a sensitivity (responsiveness) to an undesired magnetic field H_n (Noise or interference N) which is cut in half or more by doubling or more the said Operating Parameter I_{sm}, and

a sensitivity (responsiveness) to a desired physical quantity I (signal current I) which is constant within a few percent when said I_{sm} changes by said double or more.

In other words, the noise N was cut in half while the signal I remained practically constant, i.e., the signal to noise ratio SNR was doubled, all by changing the Operating Parameter Q (here I_{sm}) by a factor of two or so. This is the "Sensor" in original Claim 1, lines 4 & 5, shown below:

"find or construct a sensor with an output V which has a signal to noise ratio SNR which changes substantially when the condition of an operating parameter Q is selectively modulated". (Selectively Modulated means changed in a suitable way). (Please also see Claim 8 below).

Claims 1 thru 7 are thus limited by the basic concept as put forth in the "Discovery", page 11. Original claims 8 & 9 are also limited by the basic concept as put forth in the "Discovery", page 11.

This is seen in claim 8, page 44, lines 9 thru 13, shown below:

"said sensor is further chosen or constructed so that it has the essential characteristic that when the condition of an operating parameter Q is changed by a selective modulator, the sensitivity of said output V to said signal I is altered substantially differently from the sensitivity of said output V to said noise N in a manner called selective modulation".

Here claim 8 calls forth a "Sensor...(with)...an Operating Parameter Q". (I_{sm} in the Discovery) which alters the sensitivity to signal I substantially differently than that to noise N, i.e.,

Operating Parameter Q changes the signal to noise ratio SNR.

This is essentially the same as original claim 1.

Therefore claim 1 and claim 8 cannot be divided into separate Patents because they read upon one another.

Original claim 13 on page 50 puts forth a Swain Meter (Sensor), and on page 51 an Operating Parameter I_{sm} (Q) which sets a signal to noise ratio SNR as shown below where the last paragraph of claim 13 is repeated:

"said operating parameter I_{sm} set to a substantially greater magnitude than the magnitude corresponding to the minimum signal to noise ratio, here called SNR, so that thereby the said SNR is considerably increased over said minimum, so that said non-contact ammeter has considerably greater accuracy in the presence of said interfering magnetic field noise N".

This is the same basic concept as used in claim 1 and 8 - namely Sensor's SNR is modulated by Operating Parameter Q (I_{sm}), which is built to improve SNR, and thus accuracy.

Thus original claim 1 (and claims 2 thru 7) are limited by the same basic concept as original claim 8 (and claim 9);

This also applies to original claim 13, as set forth in evidence of record - Discovery - page 11. Therefore, restriction is not proper because they are both one invention, and so are not patentably distinct one from another.

2.1.2 Further, "inventions 1 and 11" are related: they both include the basic concept put forth in the Essential Characteristic given on page 11 and repeated below:

Essential Characteristic

Fig. 4 shows the approximate sensitivities for a five inch diameter aperture clip #88. This is an illustration of a sensor having the essential characteristic:

Firstly, the signal gain g (13) sensitivity to signal input I (7) is constant within a few percent as an operating parameter I_{sm} (12) changes from 0.18 A to 0.5 Amp peak; and

Secondly, the zero offset (11) sensitivity to a unit change in intensity of a non-linear magnitude field H_n (8) is reduced to well under half over the same range of I_{sm} (12).

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In other words, all original claims - Method (Process) or apparatus (Machine or Implement) are limited by inclusion of the Characteristic of the Sensor which is Essential (new Claim IN);

Sensor sensitivity (responsiveness) to signal input (physical quantity) I is nearly constant, while

sensitivity to a magnetic field H_n (interference noise N) is cut to less than half by a change in Operating Parameter I_{sm} (Q); so

SNR is doubled by a change in Q.

This is the same basic concept as original claim 1 (lines 4 & 5), which calls for a Sensor with SNR which changes when Q is selectively modulated (changed). Thus original claims 1 thru 7 are also limited by the basic concept as put forth in the Essential Characteristic on page 11.

Original claim 8 (p. 44, lines 9 to 13) describes a Sensor with the Essential Characteristic that a change in Q changes the SNR. This is the same basic concept as in the Essential Characteristic.

Again, the last part of original claim 13 on page 51 describes an Operating Parameter I_{sm} (Q) which is changed (from a standard setting) to a condition which causes considerably increased SNR.

This has the same basic concept as in the Essential Characteristic, page 11, wherein a change in Operating Parameter I_{sm} (Q) causes far more reduction in sensitivity (responsiveness) to a magnetic field H_n (interference N) than that to the signal input (physical quantity) I, i.e., a change in Q changes the ratio of signal to noise (SNR).

So original claims 1 thru 7, (plus 10-12 by similar reasoning) all are restricted by inclusion of the same basic concept.

The invention is one. Divisional claims would not be patentably distinct.

2.1.3 The specification is loaded with further illustrations of the basic concept and its application. To mention a few:

Fig. 4, page 57, shows graphically a Sensor's gain and also zero offset sensitivity (Ó) (sensitivity to Noise) per unit magnet H_n - as a function of (Operating Parameter) I_{sm}.

Here again, it is clear that in this Sensor (Clip #88), a change in the Operating Parameter Q changes the ratio of Signal (near constant) to Noise (reduced to less than half); i.e.,

SNR is changed by a change in Q, i.e., by Selective Modulation.

Fig. 5 (herewith and page 58) directly graphs SNR as a function of I_{sm} (Q). SNR is more than doubled by selectively modulating I_{sm}.

Fig. 6, page 59, is a more general representation of the basic concept:

Signal gain is nearly constant, but Noise Sensitivity changes a lot (SNR changes a lot) when Operating Parameter Q is selectively modulated.

Fig. 8, page 61, is a reciprocal graphing of Fig. 6. It shows:

SNR changed more than 2 to 1 by a change in Operating Parameter Q.

Fig. 12, page 65, and the Hall Effect type sensor discussion on pages 38 to 40 (table III and IV) show the same basic concept: SNR changes when an Operating Parameter Q (orthogonal magnet, etc.) changes.

On page 39, just under table III, the specification begins "This is the Discovery...". In other words, some Hall type Sensors exhibit the same basic concept type performance;

The Hall Sensor's SNR changes when an Operating Parameter Q is changed. This change in Q cannot be local core saturation as in Fig. 12, or orthogonal magnets as in table III and IV.

2.2) The preceding has shown that the
Examiner's "Plurality of Methods" is really one basic Method
as embodied in the basic concept, and
as illustrated in the Discovery, Essential Characteristic, and many more.

Every "apparatus as claimed" is limited by some form of the same basic concept; Sensor SNR is changed by changing Operating Parameter Q.

Every Process (Method) as claimed likewise is limited by some form of the same basic concept. A careful reading will show that these statements are widely supported throughout the specification and in the original claims.

2.2.1) Thus: the Process (Method) as claimed can NOT be practiced by another materially different apparatus (Machine) that is known to the Inventor, unless the apparatus includes some implementation of the basic concept: Sensor SNR is changed by changing Operating Parameter Q. And

2.2.2) Thus the apparatus as claimed can NOT be used to practice another and materially different process for "improving accuracy in an implement for measurement or control of a physical quantity" - (first 2 lines of original claim 1) i.e., a useful improvement, and known to the Inventor.

2.2.3) The Examiner's "Plurality of Methods as claimed" is in fact all one basic concept stated in different words for different claims. Some are broad and some are narrow, so different words are indicated.

3) Because the Invention is one as shown above in paragraphs 2.1, 2.1.1, 2.1.2, 2.1.3, 2.2, 2.2.1, 2.2.2, and 2.2.3;

and because an original claim could not be patented over another original claim because it would lack novelty,

because all are restricted by the basic concept illustrated in the DISCOVERY (page 11), and also by new claim IN;

restriction is improper.

4) Applicant's election is outlined in the preceding Introduction.

Applicant disagrees with the restriction requirement. The filing of redundant Applications with possible double patenting is not necessary or desirable.

Applicant has herein traversed the requirement to - in effect - divide and file divisional Patent Applications.

5.1) Applicant, as noted in the preceding Introduction:
Firstly: Elects any new claim over any similar original claim.
Secondly: Elects any Machine claim over any similar Process claim.

5.2) Accordingly, Examiner's "Invention 1" is not elected, despite the fact that Claim 1 is considered the most generic and best claim.

If need be, I expect it can be recovered in a Divisional Application.

5.3) Original Claim 1 is generic to the MEC, especially in the last phrase, which reads:
"adjust said combined so that the said Noise N mostly cancels but said sensor continues to have a good gain for said signal input I."

The key words are "combined" and "cancels". One of these, or a variation, are in all MEC claims, whether Process (Method), or Machine (means)(apparatus).

5.4) Four new claims, presented herewith, are generic:***
claim IN is generic to all; new and original, and also Method and means. It is the basic concept, illustrated in the DISCOVERY, etc.

Claim IIN is generic to all MER claims, whether new or original; Process or Machine.

*** With the numbering system used herein, it is quicker and easier to recognize generic claims (I, II, III, IV); It is also simpler to relate the subject matter of original Claims 1, 2, 3... and the new Claims 1N, 2N, 3N... I expect to return to the usual pure numeric system once the restriction issue is settled.

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Claim IIIN is generic to all MEC claims, whether new or original; Process or Machine.

Claim IVN is generic to all Process MEC Claims.

6.1) Examiner's "invention 11" is elected, under protest and with traverse as heretofore noted, because it is a Machine. However, all new claims are elected over "invention 11".

6.2) Original Claims 8 and 9 are Machine species of the MEC genus as stated in the new Claim IIIN.

6.3) Original Claim 13 is a Machine species of the MER genus as stated in new Claim IIN. The last paragraph on page 51 is the MER identifier, plus the fact that "combine" and/or "cancels" are not used in Claim 13. The key and final 4 lines are:

"said operating parameter I_{sm} set to a substantially greater magnitude than the magnitude corresponding to the minimum signal to noise ratio, here called SNR, so that thereby the said SNR is considerably increased over said minimum, so that said non-contact ammeter has considerably greater accuracy in the presence of said interfering magnetic field noise N."

6.4) Original Claim 12 is a process species of the MER genus which should be allowed for the reasons herein stated.

6.5) If forced, Applicant elects original Claim 13 a Machine species of MER genus.

6.6) All new claims presented herewith are elected over similar original claims.

All Machine claims are elected over similar Process claims.

The following elections are presented in order of preference.

6.6.1) New basic concept genus Claim IN is elected over all.

6.6.2) New MER genus Claim IIN is elected highly;

new MEC genus Claim IIIN is elected almost as highly, and

new MEC Process genus Claim IVN is elected.

6.6.3) The highly elected species in the MER genus (new Claim IIN) includes firstly the Machine species:

New Claim 13N.

6.6.4) The almost as highly elected species in the MEC genus (new Claim IIIN) include firstly the Machine species:

New Claim 8N

New Claim 9N

6.6.5) The elected species in the MER genus (new Claim IIN) include the Process species:

New Claim 12N

6.6.6) The almost elected species in the MEC Process genus (new Claim IVN) include MEC Process species:

New Claim 2N

New Claim 3N

New Claim 4N

New Claim 5N

New Claim 6N

New Claim 7N

New Claim 10N

New Claim 11N

(New Claim 1N is omitted. It's subject matter is covered by new Process Claim IVN.)

6.7) Applicant has traversed on ground that species (and genus) are not patentably distinct. The preceding cites abundant evidence now of record. Applicant has also noted and cited evidence in the Specification that the basic concept (Claim IN) is generic to all claims;

that the MER (Claim IIN) is generic to method and means species; and that the MEC (Claim IIIN) is generic to other method and means species. New Claim IVN is specifically generic to MEC Process species.

Applicant also noted that a divisional Patent Application presents novelty and double patenting problems.

Further, the MEC is not obvious - the MEC is novel - over the basic concept and over the MER - to the degree that "combining" and "canceling" confer novelty.

7) Mr. Swain regretted that he did not receive the Examiner's call of 14 Feb 97.

8) New Claims IN, IIN, IIIN, IVN; plus new Claims 2N thru 13N are submitted for consideration in the pages which follow.

Respectfully submitted.

William H. Swain

Inventor

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